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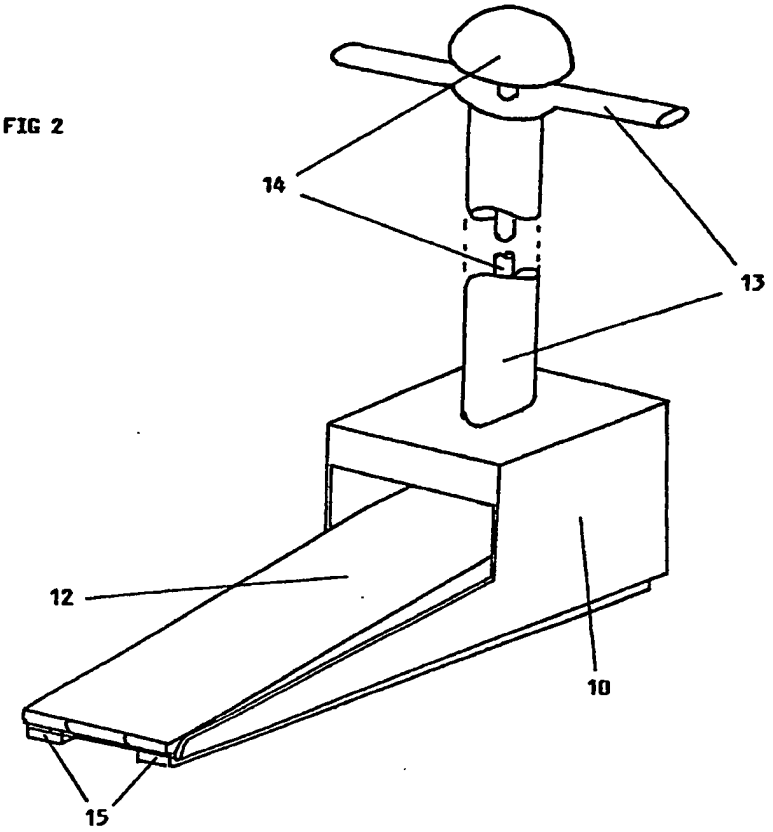
# (54) Spring-loaded doorstop wedge

(57) A doorstop comprises a tapered housing 10 with a wedge 12 hingedly connected to the housing at is narrow end. A spring within the housing acts on the wedge 12 to bias it outwardly so as to contact the undersurface of a door. A handle in the form of a tube with a handgrip 13 is attached to the housing at its widest end and has a plunger 14 extending therethrough to engage the wedge 12. By depressing the plunger 14 the wedge can be lowered against the spring pressure enabling the doorstop to be installed or withdrawn from under the door with a minimum of effort and with the operator in an upright position. Friction pads 15 may be provided on the underside of the housing.

FIG 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

FIG 1

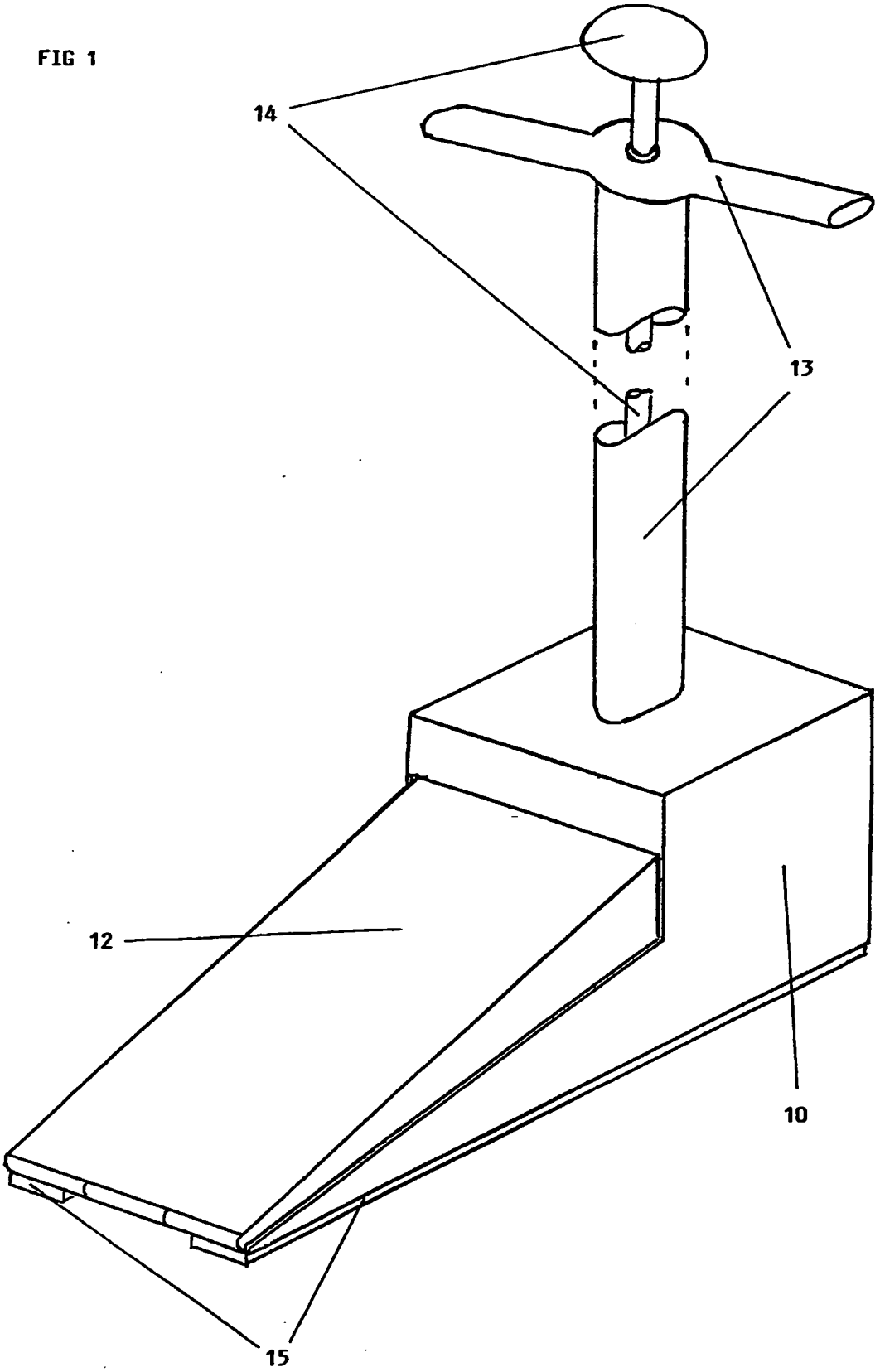


FIG 3

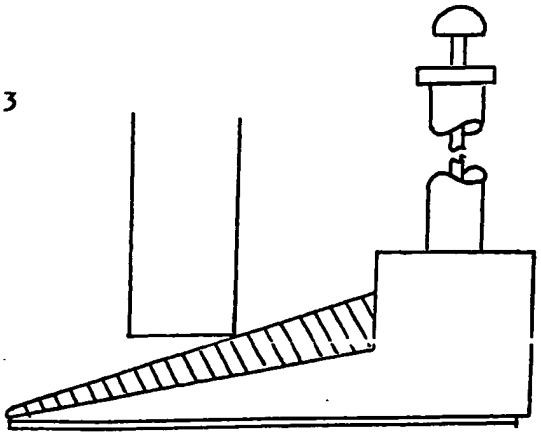
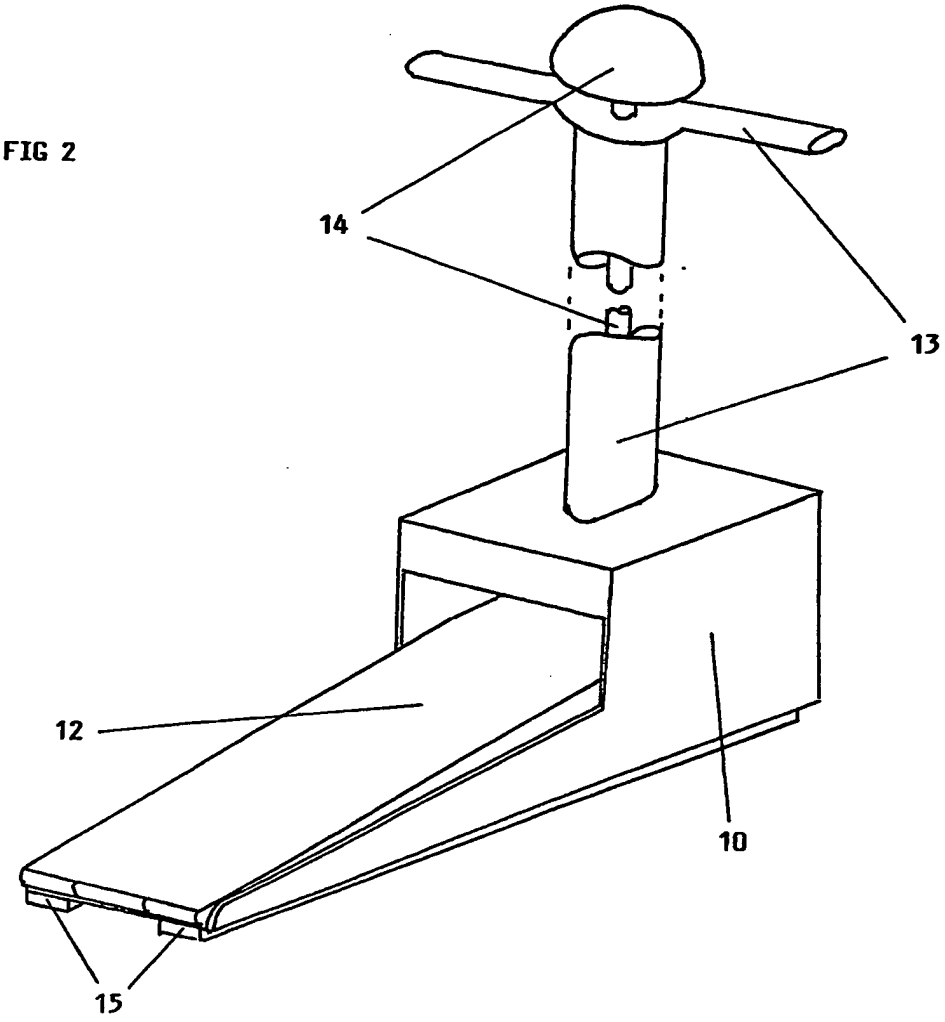


FIG 2



# SPRING-LOADED DOORSTOP

This invention relates to a spring-loaded doorstop incorporating a retractable function.

Doorstops are well known devices used for the purpose of securing side hung doors in an open or partially open position, being of particular relevance in the case of doors fitted with rising butt hinges to overcome the affect of gravity.

Some doorstops are heavy whilst other types, not infrequently, become wedged in position due to friction and/or the weight of the door. Situations of this nature can present difficulties for the elderly or infirm where the effort of lifting, stooping or kneeling is undesireable. They also are the subject of much and often unsatisfactory improvisation.

This invention provides a method of securing a door in an open position and in addition incorporates a remote controlled retractable wedge to overcome the effect of friction and/or weight of the door. Employment of this function facilitates instant removal with minimum effort on the part of the user.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawing in which:-

Figure 1 shows in perspective the doorstop in the rest position.

Figure 2 shows in perspective the doorstop with the wedge fully retracted.

Figure 3 shows in side elevatoin the doorstop in a working situation.
(the shaded area illustrates the extent of wedge retraction).

Referring to the drawing the doorstop comprises of a body 10 a hinged wedge12 a ridgit tube with integral hand grip 13 a push-rod with knob afixed 14 a conical compression spring (not shown) housed within the body and friction pads 15 attached to underside of body.

In use the tapered end of the body 10 is pushed lightly under the door until the surface of the wedge 12 is in contact with the bottom edge of the door and the friction pads 15 in contact with the floor surface.

In order to remove the doorstop the push-rod 14 is operated by exerting a downward pressure on the knob, this pressure is transmitted through the wedge 12 compressing the spring and retracting the wedge. When the push-rod is held in the depressed position (for example by a squeezing or gripping action of the hand) the doorstop can be withdrawn.

# CLAIMS

1 A spring-loaded doorstop comprising of a body in the form of a box with an integral tapered protusion on one side of the box. A wedge fixed at the pointed end by a hinge at the thinest part of the tapered protusion, and a conical compression spring situated under the thicker end of the wedge within the main body. A ridgit tube with integral handle which in turn houses a push-rod.

2 A spring-loaded doorstop as in Claim 1 whereby means in the form of a push-rod is provided to retract the wedge away from the bottom edge of the door.

3 A spring-loaded doorstop as in Claims 1 and 2 wherein the means provided to retract the wedge can be operated when the user is standing upright.

4 A spring-loaded doorstop as in Claim 1 wherein friction pads attached to the underside of the body are provided to overcome natural forces that may be exerted on the open door.

5 A spring-loaded doorstop as described herein with reference to Figures 1-3 of the accompanying drawing.

| Patents Act 1977<br>Examiner's report to the Comptroller under Section 17<br>(The Search report) | Application number<br>GB 9312656.3 |
|---|---|
| **Relevant Technical Fields**<br><br>(i) UK Cl (Ed.M) E2A (ACMA); E2X (X1)<br><br>(ii) Int Cl (Ed.5) E05C (17/54) | Search Examiner<br>S J CHURCH<br><br>Date of completion of Search<br>14 JUNE 1994 |
| **Databases** (see below)<br>(i) UK Patent Office collections of GB, EP, WO and US patent specifications.<br><br>(ii) ONLINE DATABASES: WPI | Documents considered relevant following a search in respect of Claims :-<br>1-3 |

**Categories of documents**

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|---|---|---|---|
| **X:** | Document indicating lack of novelty or of inventive step. | **P:** | Document published on or after the declared priority date but before the filing date of the present application. |
| **Y:** | Document indicating lack of inventive step if combined with one or more other documents of the same category. | **E:** | Patent document published on or after, but with priority date earlier than, the filing date of the present application. |
| **A:** | Document indicating technological background and/or state of the art. | **&:** | Member of the same patent family; corresponding document. |

| Category | Identity of document and relevant passages | | Relevant to claim(s) |
|---|---|---|---|
| A | GB 0461138 A | (GILL) note the sprung wedge member 5 | |
| A | US 5217269 A | (WILTBERGER) note the handle 22 | |
| A | US 4142752 A | (CHILTON) note the sprung wedge plate 18 | |

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

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EUR-CL (EPC): E05C017/54

US-CL-CURRENT: 292/343, 292/DIG.19

ABSTRACT:

CHG DATE=19990617 STATUS=O> A doorstop comprises a tapered housing 10 with a
wedge 12 hingedly connected to the housing at is narrow end. A spring within

**the housing acts on the wedge 12 to bias it outwardly so as to contact the undersurface of a door. A handle in the form of a tube with a handgrip 13 is attached to the housing at its widest end and has a plunger 14 extending therethrough to engage the wedge 12. By depressing the plunger 14 the wedge**
**can be lowered against the spring pressure enabling the doorstop to be installed or withdrawn from under the door with a minimum of effort and with**
**the operator in an upright position. Friction pads 15 may be provided on the**
**underside of the housing. <IMAGE>**